WHAT IS CLAIMED IS:

1.   A virtual reality generator comprising an input
module that receives as input financial information; and
means for outputing to a display device a virtual reality
5   world generated from the financial information.

2.   The virtual reality generator of claim 1 wherein the
financial information is pre-processed by a financial
analytic system prior to input to the virtual reality
10   generator.

3.   The virtual reality generator of claim 2 wherein the
financial analytic system pre-processes the financial
information in real-time.
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4.   The virtual reality generator of claim 1 wherein the
financial information is received from a data file.

5.   The virtual reality generator of claim 1 wherein the
20   financial information is received from a real-time data
source.

6.   The virtual reality generator of claim 1 wherein the
display device is a monitor.
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7.   The virtual reality generator of claim 1 wherein the
display device is a visual stereoscopic head-mounted
display device.

30   8.   The virtual reality generator of claim 1 further
comprising means for dynamically displaying and
continuously updating the virtual reality world.

9.   The virtual reality generator of claim 1 further
35   comprising means for simulating movement through the
virtual reality world under the control of a control
device.

10. The virtual reality generator of claim 9 wherein the control device is a trackball.

11. The virtual reality generator of claim 9 wherein the control device is a data glove.

12. The virtual reality generator of claim 9 wherein the control device is a binocular omni orientation monitor.

13. The virtual reality generator of claim 9 wherein the control device is a mouse.

14. The virtual reality generator of claim 9 wherein the control device is a wand.

15. The virtual reality generator of claim 9 wherein the control device is a joystick.

16. The virtual reality generator of claim 9 wherein the simulated movement is controlled by movement of a headset containing the display device.

17. The virtual reality generator of claim 1 wherein the virtual reality world comprises a plurality of metaphors, each one of the plurality of metaphors representing a subset of financial information.

18. The virtual reality generator of claim 17 wherein the plurality of metaphors are output for display as graphical primitives.

19. The virtual reality generator of claim 17 further comprising a user interface module controlling a window display, the window display enabling input of a plurality of parameters to define the characteristics of the plurality of metaphors.

20. The virtual reality generator of claim 19 wherein the plurality of parameters and the financial information determines the size, shape, color, and movement of each one of the plurality of metaphors.

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21. The virtual reality generator of claim 19 wherein each one of the plurality of metaphors has a visual consistency and wherein a predetermined one of the plurality of parameters and the financial information

10 determines the visual consistency of each one of the plurality of metaphors.

22. The virtual reality generator of claim 19 wherein each one of the plurality of metaphors has a texture and

15 wherein a predetermined one of the plurality of parameters and the financial information determines the texture of each one of the plurality of metaphors.

23. The virtual reality generator of claim 17 wherein

20 the plurality of metaphors are animated.

24. The virtual reality generator of claim 1 wherein the virtual reality world is defined by a configuration parameter set.

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25. The virtual reality generator of claim 24 further comprising a memory wherein the configuration parameter set is stored in the memory.

30 26. The virtual reality generator of claim 1 wherein the financial information is pre-processed by a knowledge-base system prior to input to the virtual reality generator.

35 27. The virtual reality generator of claim 1 wherein the financial information is pre-processed by a neural network prior to input to the virtual reality generator.

28. A virtual reality generator to display on a display
device a stream of financial information received from a
financial analytic system as a virtual reality world, the
virtual reality generator comprising:

5   an input module to continuously receive the stream
of financial information from the financial analytic; and
    a virtual reality generator module including:
        (i) means for generating and continuously
        modifying the virtual reality world so that the
10   virtual reality world correspondingly
        represents the stream of financial information,
        (ii) means for causing the virtual reality
        world to be displayed on the display device
        from a plurality of perspectives, and
15   (iii) means for simulating, on the display
        device, movement through the virtual reality
        world.

29. A virtual reality generator to display on a display
20 device financial information as a virtual reality world,
the virtual reality generator comprising:
    an input module to receive as input the financial
information; and
    a virtual reality generator module including:
·25   (i) means for generating the virtual reality
        world representing the financial information,
        (ii) means for causing the virtual reality
        world to be displayed on the display device
        from a plurality of perspectives, and
30   (iii) means for simulating, on the display
        device, movement through the virtual reality
        world.

30. The virtual reality generator of claim 29 wherein
35 the input module receives the financial information from
a real-time data source.

31.   The virtual reality generator of claim 29 wherein the input module receives the financial information from a database.

5   32.   The virtual reality generator of claim 29 wherein the input module receives the financial information from a real-time data source and a database.

33.   The virtual reality generator of any one of claims 10   29, 30, 31 or 32 wherein the financial information is pre-processed by an analytic system prior to receipt by the input module.

34.   A virtual reality generator to display financial 15   information as a virtual reality world, the virtual reality generator comprising:
      an input module receiving financial information from a financial analytic system;
      a user interface module receiving as input a 20   plurality of display parameters and a plurality of filter parameters, the user interface module modifying the financial information to comply with the plurality of filter parameters; and
      a virtual reality generator module generating and 25   continuously modifying a virtual reality world, the virtual reality world representing the modified financial information and satisfying the plurality of display parameters.

30   35.   The virtual reality generator of claim 34 wherein the virtual reality generator module further comprises means for displaying the virtual reality world from a plurality of perspectives.

35   36.   The virtual reality generator of claim 34 wherein the virtual reality generator module further comprises means for simulating movement in the virtual reality

world.

37.   The virtual reality generator of claim 34 wherein
the modified financial information is displayed as a
plurality of metaphors in the virtual reality world.

38.   The virtual reality generator of claim 34 wherein
the plurality of metaphors are geometric primitives.

39.   The virtual reality generator of claim 34 wherein
the plurality of metaphors are polygons.

40.   The virtual reality generator of claim 34 wherein
the plurality of metaphors are rotatable.

41.   The virtual reality generator of claim 34 wherein
the plurality of metaphors have variable luminance.

42.   The virtual reality generator of claim 34 wherein a
subset of the plurality of metaphors is selected to
rotate by a predetermined one of the plurality of display
parameters, each metaphor in the subset generated by the
virtual reality generator module such that it rotates.

43.   The virtual reality generator of claim 34 wherein
the plurality of metaphors have user defined textures.

44.   The virtual reality generator of claim 34 wherein
the plurality of metaphors are colored.

45.   The virtual reality generator of claim 44 wherein
the color of each of the plurality of metaphors is
determined by a predetermined one of the plurality of
display parameters.

46.   The virtual reality generator of claim 34 wherein a
subset of the plurality of metaphors is selected to flash

by a predetermined one of the plurality of display
parameters, each metaphor in the subset generated by the
virtual reality module such that it flashes.

5   47.   The virtual reality generator of claim 35 wherein
the plurality of display parameters comprise attributes
of financial instruments.

48.   The virtual reality generator of claim 35 wherein
10   the user interface module includes means for displaying a
simulated cockpit.

49.   The virtual reality generator of claim 35 wherein
the virtual reality world is divided into a grid of sub-
15   regions.

50.   The virtual reality generator of claim 49 wherein
the virtual reality world represents the financial
information for a single industry and each sub-region
20   represents the financial information for the single
industry in a plurality of markets.

51.   The virtual reality generator of claim 49 wherein
the virtual reality world represents the financial
25   information for a single market and each sub-region
represents the financial information for a plurality of
industries in the single market.

52.   The virtual reality generator of claim 49 wherein
30   the virtual reality world represents the financial
information for stocks, options and bonds in a single
market and each sub-region represents the financial
performance of the stocks, options and bonds having a
predetermined expiration date in a predetermined industry
35   group.

53.   The virtual reality generator of claim 34 wherein

the financial information comprises financial information concerning stocks.

54. The virtual reality generator of claim 34 wherein the financial information comprises financial information concerning bonds.

55. The virtual reality generator of claim 34 wherein the financial information comprises financial information concerning commodities.

56. The virtual reality generator of claim 53 wherein the virtual reality world comprises a plurality of metaphors representing a plurality of stocks, each one of the plurality of stocks displayed in the virtual reality world satisfying the filter parameters.

57. The virtual reality generator of claim 56 wherein each one of the plurality of metaphors have shape, size, position, behavior and color to represent financial information concerning one of the plurality of stocks.

58. The virtual reality generator of claim 43 wherein the user defined texture includes a logo.

59. The virtual reality generator of claim 35 wherein the virtual reality world is updated at least 30 times per second.

60. The virtual reality generator of claim 34 wherein the virtual reality generator module includes means for generating and simultaneously displaying a plurality of virtual reality worlds.

61. The virtual reality generator of claim 37 wherein the user interface module includes means for selecting one of the plurality of metaphors and wherein the virtual

reality generator module includes means for displaying information relating to the selected one of the plurality of metaphors.

5 62. The virtual reality generator of claim 61 further comprising means for producing sounds relating to the selected one of the plurality of metaphors.

63. A computer system to create a virtual reality world
10 representing financial information, the computer system comprising

an input port receiving as input financial information;

a programmable processor coupled to the input port
15 including means for generating the virtual reality world from the financial information;

a display device coupled to the programmable processor for displaying the virtual reality world; and

a control device coupled to the programmable
20 processor to control display of and movement through the virtual reality world.

64.   The computer system of claim 63 wherein the programmable processor is a microprocessor.
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65. The computer system of claim 63 wherein the display device is at least a 20 inch, high resolution monitor.

66. The computer system of claim 63 wherein the display
30 device is a headset.

67. The computer system of claim 63 wherein the control device is a trackball.

35 68. The computer system of claim 63 wherein the display device is a binocular omni orientation monitor.

69. The computer system of claim 63 wherein the control device is a dataglove.

70. The computer system of claim 63 wherein the means for generating the virtual reality world utilizes a plurality of object-oriented library functions.

71. The computer system of claim 70 wherein the plurality of object-oriented library functions generate the virtual reality world.

72. The computer system of claim 63 further comprising a memory device coupled to the programmable processor to store the virtual reality world.

73. A virtual reality generator to generate a virtual reality world representing financial information, the virtual reality generator comprising:

an input module continuously receiving from a financial analytic system the financial information; and

a virtual reality generator module for generating and continuously modifying the virtual reality world such that the virtual reality world correspondingly represents the financial information.

74. A virtual reality generator to display on a display device financial information as a virtual reality world, the virtual reality generator comprising:

means for receiving as input the financial information; and

a virtual reality generator module including means for

(i) generating the virtual reality world representing the financial information,

(ii) displaying on the display device a virtual reality world representing the financial information,

(iii) displaying the virtual reality world from a plurality of perspectives, and

(iv) simulating, on the display device, movement through the virtual reality world.

75. A computer system to create a virtual reality world representing financial information, the computer system comprising

an input port receiving as input financial information;

a plurality of programmable processors coupled to coupled to the input port including means for generating the virtual reality world from the financial information;

a display device coupled to at least one of the plurality of programmable processors for displaying the virtual reality world in stereoscopic form; and

a control device coupled to at least one of the plurality of programmable processors to control display of and movement through the virtual reality world.

76. A virtual reality generator comprising:

an input module to receive packets of financial information at regular predetermined intervals;

display means for displaying on a display device a virtual reality world generated from the financial information; and

processing means for updating the virtual reality world when a new packet of financial information is received by the input module.

77. The virtual reality world of claim 76 further comprising:

means for receiving input from a user; and

means for modifying the display on the display device in response to the input received from the user.

78. A method for displaying and manipulating large

quantities of financial information, the method comprising the steps of:

a. receiving as input pre-processed financial information;

5   b. controllably selecting a part of the pre-processed financial information for display;

c. generating a virtual reality world from the financial information selected for display, the virtual reality world representing the financial information; and

10   d. displaying the virtual reality world.

79. The method of claim 78 further comprising the steps of:

e. continuously updating the virtual reality world
15 using the pre-processed financial information; and

f. simulating movement through the virtual reality world.

80. The method of claim 78 further comprising the step
20 of simulating movement through the virtual reality world.

81. The method of claim 78 further comprising the steps of continuously updating the virtual reality world using the pre-processed financial information.
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82. A method for displaying and manipulating financial information, the method comprising the steps of:

a. receiving as input the financial information;

b. generating a virtual reality world from the
30 financial information, the virtual reality world representing the financial information; and

c. displaying the virtual reality world.

83. The method of claim 82 further comprising the steps
35 of:

d. continuously updating the virtual reality world using the financial information; and

e.   simulating movement through the virtual reality world.

84.   A method for displaying and manipulating financial
5   information, the method comprising the steps of:
   a.   continuously receiving as input packets of
financial information;
   b.   generating a virtual reality world from the
packets of financial information, the virtual reality
10   world representing the financial information;
   c.   displaying the virtual reality world.
   d.   updating the virtual reality world when a
packet of financial information is received; and
   e.   simulating movement through the virtual reality
15   world.

add B²